



US006021429A

United States Patent [19]**Danknick**[11] **Patent Number:** **6,021,429**[45] **Date of Patent:** **Feb. 1, 2000**[54] **NETWORK DEVICE WHICH MAINTAINS A LIST OF DEVICE ADDRESSES**[75] **Inventor:** Dan Danknick, Orange, Calif.[73] **Assignee:** Canon Information Systems, Inc., Irvine, Calif.[21] **Appl. No.:** 08/749,629[22] **Filed:** Nov. 18, 1996[51] **Int. Cl.⁷** G06F 12/06; G06F 13/38[52] **U.S. Cl.** 709/208; 710/9; 709/250; 709/245[58] **Field of Search** 395/200.53, 200.54, 395/200.38, 200.39, 200.48, 200.67, 200.75, 200.79, 200.8, 200.83, 823, 824, 828, 829, 835, 840, 200.52; 709/218, 219, 208, 209, 223, 224, 247, 249, 250, 253; 710/3, 4, 8, 9[56] **References Cited****U.S. PATENT DOCUMENTS**

5,140,585	8/1992	Tomikawa	370/60.1
5,185,860	2/1993	Wu	395/200
5,287,103	2/1994	Kasprzyk et al.	340/825.52
5,304,992	4/1994	Harashima	340/825.52
5,337,309	8/1994	Faulk, Jr.	370/60
5,353,399	10/1994	Kuwamoto et al.	395/159
5,542,047	7/1996	Armstrong	395/200.11
5,548,722	8/1996	Jalalian	395/200.1
5,548,725	8/1996	Tanaka et al.	395/200.05
5,550,979	8/1996	Tanaka et al.	395/200.05
5,588,119	12/1996	Vincent et al.	395/200.15
5,604,869	2/1997	Mincher et al.	395/200.2
5,615,389	3/1997	Mayfield et al.	395/828
5,668,952	9/1997	Slane	395/200.75
5,687,320	11/1997	Wiley et al.	395/200.16
5,706,210	1/1998	Kumano et al.	364/514
5,727,157	3/1998	Orr et al.	395/200.54
5,751,967	5/1998	Raab et al.	395/200.58
5,754,767	5/1998	Ruiz	395/200.5
5,774,667	6/1998	Garvey et al.	395/200.52
5,802,300	9/1998	Tanaka et al.	395/200.52
5,838,907	11/1998	Hansen	395/200.5
5,845,081	12/1998	Rangarajan et al.	395/200.54

OTHER PUBLICATIONS

"HP Forms Internet Solutions Operation", Hewlett-Packard Printing & Imaging News (visited Nov. 6, 1996) <<http://www-dmo.external.hp.com/peripherals/press/news/96jul15.html>> (2 pages).

HP Unveils Strategy for Future of Printer Management, Hewlett-Packard Company (1995) (3 pages).

Tektronix PhaserLink Software: Web-Powered Print Administration and Support, Tektronix, Inc., Jan. 8, 1996 (1 page).

"PhaserLink Software: East access to your printer's information", Tektronix, Inc., Jan. 8, 1996, (7 pages).

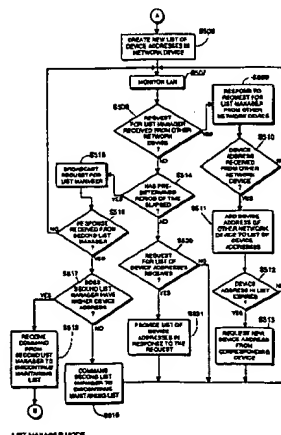
"PhaserLink Demo", Tektronix, Inc. (visited Nov. 6, 1996) <http://www.tek.com/Color_Printers/support/demo.html> (3 pages).

"PhaserLink for the Phaser 340: Current status for printer named Monterey/Wasatch", Tektronix, Inc. (visited Nov. 6, 1996) <http://www.tek.com/Color_Printers/support/demo340/button_status.html> (1 page).

(List continued on next page.)

Primary Examiner—Frank J. Asta**Assistant Examiner**—Marc D. Thompson**Attorney, Agent, or Firm**—Fitzpatrick, Cella, Harper & Scinto[57] **ABSTRACT**

A method controls a network device on a local area network (LAN) to operate as a list manager which maintains a list of device addresses for the LAN, and to operate as a slave which provides a device address of the network device to a list manager. The method comprises the steps of determining whether a list manager is operating on the LAN, controlling the network device to operate as a slave on the LAN when the determining step determines that a list manager is operating on the LAN, and controlling the network device to operate as the list manager for the LAN when the determining step determines that no list manager is operating on the LAN.

54 Claims, 10 Drawing Sheets

DOCUMENT-IDENTIFIER: US 6021429 A

TITLE: Network device which maintains a list of device addresses

DEPR:

As also shown in FIG. 2, NEB 2 is connected via peripheral connector 27 to printer interface card 29. Printer interface card 29 directly controls the print engine in printer 17. Print data and printer status commands are fed to printer interface card 29 from NEB 2 via peripheral connector 27, and printer status information and statistics, e.g., number of pages printed, signals indicating end times of print jobs, etc., are obtained from printer interface card 29 also via peripheral connector 27. NEB 2 communicates this information onto LAN 1 via LAN connector 30. LAN connector 30 may be either a BNC connector, an RJ-45 connector, or their equivalent. A BNC connector is shown in FIG. 2.

DOCUMENT-IDENTIFIER: US 6301011 B1

TITLE: Dynamic plug and play interface for output device

DEPR:

The supervisor 420 delivers data to the various output devices 500. The supervisor 420 receives the print jobs from the spooler 410, interprets the print jobs for print instructions and parameters, passes the print data, instructions and parameters to the appropriate output device 500, and handles any responses made by the output device 500. Multiple supervisors 420 can be supported by a single spooler 410. The supervisor 420 can also receive client management requests that apply to the supervisor 420 or to the output devices 500.

DOCUMENT-IDENTIFIER: US 6280105 B1

TITLE: Printing system and printing control method

DEPR:

In the expanded system described above, the content of the print data stored in the spool file 303 is checked and the printer driver handles the print data as monochromatic print data when it contains no color data, thus issuing the calibration stop command and outputting the print job containing the calibration stop command, as shown in FIG. 10. This process is done without requiring the user to be consciously aware of the content of the print data.

DOCUMENT-IDENTIFIER: US 6213652 B1
TITLE: Job scheduling system for print processing

BSPR:

According to a twelfth aspect of the present invention, there is provided a job scheduling device for storing, in a queue, print jobs which include print data and attribute information and for which processing requests were received from terminals, and for sequentially printing the print jobs held in the queue based on the attribute information using a job execution section, the job scheduling device comprising: a plurality of queues provided corresponding to print job states; scheduling means for scheduling the print jobs using the plurality of queues; and attribute modifying means for modifying the attribute information only when a print job can be changed at the time that an instruction for modifying the attribute information of the print job is received, and when instruction is free from errors.

DOCUMENT-IDENTIFIER: US 6023727 A
TITLE: Smart flash

DEPR:

Broadly speaking, NEB 101 is an interactive network circuit board which couples printer 102 to LAN 100, making printer 102 a responsive and interactive network member. NEB 101 receives print job information and status requests from LAN 100, transmits the print data and status commands to printer 102 for execution, receives status information from printer 102, and transmits status information back to LAN 100.

DEPR:

FIG. 18 shows how available memory in SRAM 200 is divided in logical space. All data transferred from NEB 101 to printer 102, including print job data, commands and status requests, are written by NEB microprocessor 173 into printer data area 201, from where the data are read by printer interface microprocessor 151. Conversely, all data transferred from printer 102 to NEB 101 are written by printer interface microprocessor 151 into message data area 202, from where the data are read by NEB microprocessor 173.